Conservative Management of Anal Fissures

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ABSTRACT

Background: Anal fissures are common, but most are short lived and heal spontaneously. Those which persist and require intervention cause considerable morbidity in an otherwise healthy young population. Glyceryl trinitrate is well in the conservative management of anal fissures.

Material and Methods: The retrospective study was carried at Sher-i-Kashmir Institute of Medical Science Srinagar, Kashmir, India from Jan. 2005 to Dec. 2005. Total of 111 patients were studied, to evaluate the result of glyceryl trinitrate treatment in the management of anal fissures.

Results: 80% of the fissures healed with topical glyceryl trinitrate treatment over a period of 6-8 weeks, with no recurrence during a one year follow up. The remaining 20% patients had to be managed with manual dilatation (8 patients) and lateral internal sphincterotomy (14 patients).

Conclusion: Our conclusion is that glyceryl trinitrate induces a chemical sphincterotomy and produces healing of fissure in majority of patients. *J Med Sci* 2009;12(1):11-13.

Key words: Anal Fissure, Glyceryl trinitrate, Anal dilatation, Internal Anal Sphincterotomy.

Introduction

Anal fissures or fissure-in-ano is a common condition that can cause severe anal pain after defecation, bleeding and pruritis ani. It is a linear longitudinal tear in the lining of the anal canal that extends from the dentate line to the anal verge. In 90% cases the tear is located in the posterior midline.¹ The majority of anal fissures are acute and self limiting with simple conservative dietary measures. Fissures that fail to resolve after 6 weeks are defined as chronic and these usually require pharmacological or surgical intervention to promote healing.¹

Untill approximately 5, years ago, lateral internal sphincterotomy was the gold standard in treatment, producing rapid symptom relief and healing rates of over 90%, but it is now less popular as disturbances in continence can occur in upto 30% of patients.² Pharmacological agents such as nitrates, calcium channel blockers and botulinum toxin have largely replaced surgery as first line therapy for anal fissures. They reduce anal hypertonia by causing reversible sphincterotomy and thereby avoiding incontinence.²

Material & Methods

This study was conducted retrospectively at Sher-i-Kashmir Institute of Medical Science Srinagar, Kashmir India over a period of 2 years from January 2005 to Dececeber 2006 with further follow up for a period of one year. One hundred eleven patients were studied. All the

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patients were subjected to detailed history and physical examination. Base line investigation were done including haemogram, kidney function tests, blood sugar, ECG, and X-ray chest. The diagnosis was confirmed by local perianal examination which revealed a tightly closed and puckered anus. On gentle parting of the buttocks, the lower end of the fissures is seen. Digital examination of the anal canal was not attempted in acute phase, unless the fissure could not be seen or it was imperative to exclude major intra-rectal pathology.

All the patients were put on high fibre diet, increased water intake, stool softening laxatives and warm sitz baths. In addition to this patients were put on topical 0.2% glyceryl trinitrate (GTN), applied 2-3 times daily at the distal anal canal for 6-8 weeks.

Results

Most of our patients were in the age group of 16 years to 50 years with a median age of 33 years. Seventy-two of our patients were males and 39 were females, with 65 patients belonging to rural and 46 to urban areas. Pain was seen in all the 111 patients, while as bleeding with stool was seen in 91 (82%) patients. Constipation was the associated clinical feature in 100 (90%) patients. A single posterior linear tear in anal mucosa was seen in 94 (84.6%) patients with anterior midline fissure in 15 (13.5%) and multiple lateral tears in 2 (1.8%) patients. Twelve patients with anterior fissure were females with history of child birth during last 6 months in 10 (9%) females.

Out of 111 patients, complete healing of the fissure was seen in 89 (80%) patients over a period of 6-8 weeks. There was no relapse in any of these patients during a follow up period of one year. Fissure failed to heal in 22 (20%) patients and these patients continued to be symptomatic. Out of 22 patients, manual anal dilatation was done in 8 and lateral internal sphincterotomy in 14 patients. Post operatively incontinence was seen in 1 (7%) patient who underwent lateral internal sphincterotomy, which improved over a period of time.

Discussion

Anal fissure is a common condition affecting all age groups, but is seen particularly in young and otherwise healthy adults with equal incidence in both the sexes.³ The classical symptoms are anal pain during or after defaecation accompanied by the passage of bright red blood per anus. The pain is often severe may last for few minutes to several hours after defaecation, bleeding is separate from the stool and is usually modest.³ In addition, pruritis ani, may accompany up to 50% of anal fissures. Symptoms from fissures cause considerable morbidity and reduction in quality of life.⁴

On examination the fissure may be apparent as the

buttocks are parted, but marked spasm of the anal sphincter often obscures the view. An early fissure has sharply demarcated, fresh mucosal edges and there may be granulation tissue in its base. With increasing chronicity margins of fissure become indurated and there is lack of any granulation tissue. Secondary changes such as sentinel skin tag, hypertrophied anal papilla or anal stenosis are often seen.

Fissures are usually single and in the posterior midline, but 10% women and 1% of men have anterior fissures. Women with symptoms following child birth accounts for 3-11% of all chronic fissures and tend to have anterior fissure.⁵ In our study 13.5% patients had fissure anteriorly which included 11% females, with history of child birth in 9% females. Multiple fissures or those in the lateral positions on the anal margin may indicate underlying inflammatory bowel disease, syphilis or immunosuppression.

Chronic anal fissures are generally associated with raised resting anal canal pressure, secondary to hypertonicity of the internal anal sphincter and treatment is directed at reducing this. Traditional surgical treatments, namely manual anal dilatation or sphincterotomy effectively heal most of the fissures within few weeks, but may result in permanently impaired anal continence. This has led to the search for alternative non-surgical treatment. Various pharmacological agents have been shown to lower resting anal pressure and heal fissures without threatening anal continence^{1,3} and this chemical sphincterotomy is now accepted first line treatment in many centers.^{1,2,3}

Recognition of NO as the non-adrenergic, non-cholinergic neurotransmitter mediating relaxation of the internal anal sphincter has initiated the widespread use of organic nitrates in the treatment of chronic anal fissure. These agents are metabolized at cellular level to release NO, which in turn mediates relaxation of the internal sphincter via guanyl cyclase pathway by increasing cGMP levels within the smooth muscle cell.

Most of the studies report a good healing in majority of cases with the use of preparations containing isosorbide dinitrate and GTN.^{6,7,8} Topical GTN ointment applied to the anal verge is generally accepted as an effective treatment for chronic fissures, the dose of GTN, administered depends upon both the concentration and volume of ointment applied. A regimen using a 0.2% GTN ointment applied 2-3 times daily to the distal anal canal for upto 8 weeks has been shown to heal two-thirds of chronic fissure.^{6,8,9} Over half of these patients develop headache as a side effect of the treatment^{8,9} which reduces with continued applications, although it may lead to cessation of treatment in some cases. For maximal benefit in the clinical setting, topical 0.2% GTN should be used for more than 6 weeks.^{9,10} In our study 80% of the patients had complete

healing of fissure over a period of 6-8 weeks with the use of 0.2% GTN applied 2-3 times daily with no relapse during a follow up period of one year. Lund JN *et al* reported a recurrence of symptoms in 27% patients within a median of 2 years.⁶

In addition to nitrates, other pharmacological agents such calcium channel blockers and botulinum A toxin have also been used with excellent results. Nifedipine and diltiazem are two commonly used calcium channel blockers and act by decreasing resting anal pressure in patients with chronic anal fissure.^{11,12} A prospective cohort study reported healing in 9 of 15 patients with chronic fissures treated with oral nifedipine in dose of 20 mg twice a day.¹¹ Oral diltiazem in concentration of 2% produces a healing rate of 71%.¹² Botulinum toxin A, is a lethal biological toxin produced by clostridium botulinum. Its is a potent neurotoxin which binds to presynaptic cholinergic nerve terminals, thereby inhibiting the release of acetylcholine at the neuromuscular junction which results in paralysis within hours that persists for 3-4 months. It is given in the form of injection into the anal sphincter and produces a healing upto 82% in chronic anal fissures.¹³ The treatment is advantageous in that a single injection produces a prolonged effect that is ultimately reversible avoiding permanent injury to the anal sphincter.

Although pharmacological agents offer useful first line treatment for chronic fissures, failure of medical therapy and persistent symptoms warrant surgical intervention. The surgical approaches to chronic fissures have included manual anal dilatation or sphincterotomy and most recently an advancement flaps to cover the mucosal defect.

Conclusion

Pharmacological agents effectively produce chemical sphincterotomy, with subsequent healing in majority of fissures. Topical 0.2% GTN is the most widely used, but many patients experience trouble-some headache. Where pharmacological therapy fails or fissure recurs frequently and patients have raised resting anal pressure, lateral

internal sphincterotomy is the surgical treatment of choice.

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